

RESERVOIR STORAGE

March 2014

At the end of the month, total storage in 114 of the state's major water supply reservoirs was at 20.23 million acre-feet*, or 64% of their total conservation storage capacity. This is 84,500 acre-feet more than a month ago but 472,740 acre-feet less than the storage at this time last year. No data was reported for Electra and Twin Buttes. Electra has been empty since the end of October, 2012, and Twin Buttes has been empty since mid-November, 2013.

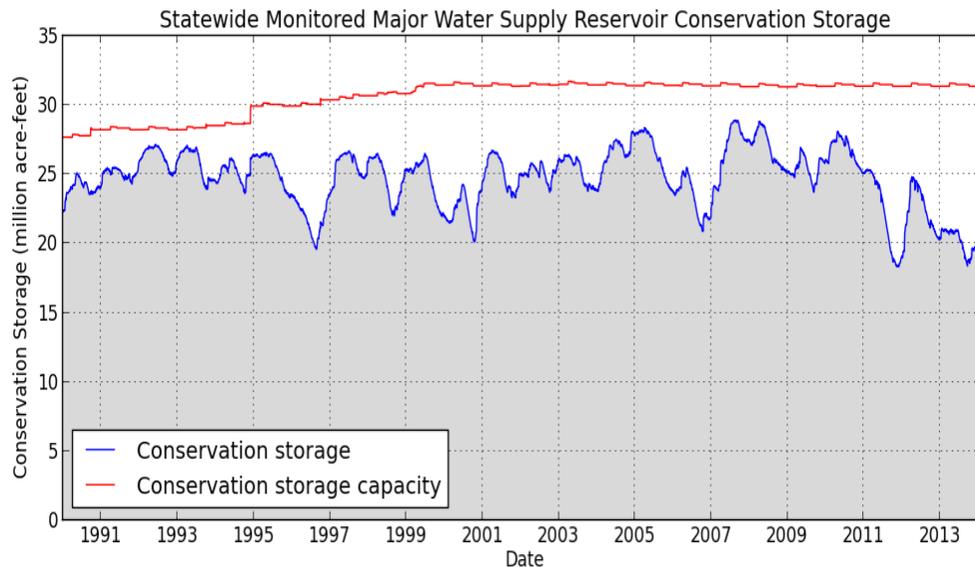
Nineteen reservoirs, most in North Central and East regions, held 100% of conservation storage capacity. Thirteen (13) reservoirs were at or below 10% full: Meredith (0%), North Fork Buffalo Creek (0%), White River (0%), Electra (0%), Twin Buttes (0%), J. B. Thomas (1%), O. C. Fisher (1%), Medina (3%), E.V. Spence (3%), Palo Duro (4%), Abilene (4%), Mackenzie (5%), and Champion Creek (7%).

Total combined storage was greater than 70% in the Upper Coast (92%) and East (93%) regions. The regions with the lowest percentage storage were the High Plains (1%) and Low Rolling Plains regions (22%). Storage declined in 5 regions and increased in 4 regions over the past month.

Elephant Butte reservoir held 361,516 acre-feet, or 18% of storage capacity. This is 21,862 acre-feet more than a month ago.

* Only the Texas share of storage in border reservoirs is counted.

CONSERVATION STORAGE DATA FOR



Figures are based on the end of the month data at 114 major reservoirs that represent 96 percent of the total conservation storage capacity of the 188 major water supply reservoirs in Texas. Major reservoirs are defined as having a conservation storage capacity of 5,000 acre-feet or greater.

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

Name of Lake or Reservoir	Conservation Storage Capacity (acre-feet)	Conservation Storage end of Mar		Change since end of Feb 2014		Change since end of Mar 2013	
		2014 (acre-feet)	(%)	(acre-feet)	(%)	(acre-feet)	(%)
HIGH PLAINS							
Palo Duro Reservoir	61,066	2,201	4	-233	-0	808	1
Meredith, Lake (Texas)	500,000	0	0	0	0	0	0
Meredith, Lake (Texas & Oklahoma)	779,556	0	0	0	0	0	0
MacKenzie Reservoir	46,450	2,352	5	-48	-0	-608	-1
White River Lake	29,880	0	0	0	0	-921	-3
TOTAL	637,396	4,553	1	-281	-0	-721	-0
LOW ROLLING PLAINS							
Greenbelt Lake	59,968	8,518	14	-65	-0	1,021	2
*Electra, Lake	5,626	No Data					
N. Fork Buffalo Crk Reservoir	15,400	36	0	-18	-0	-685	-4
Kemp, Lake	245,307	58,625	24	-538	-0	4,822	2
Millers Creek Reservoir	26,768	3,782	14	-256	-1	-2,777	-10
Alan Henry Reservoir	94,808	59,731	63	-1,193	-1	-7,990	-8
Stamford, Lake	51,570	7,097	14	-561	-1	-5,372	-10
J B Thomas, Lake	199,931	2,267	1	-267	-0	1,348	1
Fort Phantom Hill, Lake	70,030	29,869	43	-708	-1	-3,783	-5
Sweetwater, Lake	12,267	2,375	19	-84	-1	-1,092	-9
Colorado City, Lake	30,758	7,979	26	-258	-1	-2,287	-7
Champion Creek Reservoir	41,580	2,838	7	-101	-0	-418	-1
Abilene, Lake	7,900	323	4	-158	-2	-824	-10
Coleman, Lake	38,075	14,709	39	-321	-1	-2,181	-6
Hords Creek Lake	8,443	2,479	29	-84	-1	-350	-4
TOTAL	902,805	200,628	22	-4,612	-1	-12,050	-1
NORTH CENTRAL							
Nocona, Lake (Farmers Crk)	21,444	8,693	41	-166	-1	-1,688	-8
Hubert H Moss Lake	24,058	20,848	87	91	0	-161	-1
Texoma, Lake (Texas)	1,258,113	976,905	78	5,017	0	-104,754	-8
Texoma, Lake (Texas & Oklahoma)	2,525,281	976,905	39	5,017	0	-104,754	-4
*Pat Mayse Lake	113,683	86,063	76	-1,176	-1	-6,382	-6
Kickapoo, Lake	85,825	25,680	30	-645	-1	-7,629	-9
Arrowhead, Lake	235,997	58,942	25	-2,195	-1	-32,378	-14
Bonham, Lake	11,027	8,976	81	125	1	-387	-4
Crook, Lake	9,195	8,758	95	-20	-0	1,040	11
Amon G Carter, Lake	19,266	8,886	46	-217	-1	-2,879	-15
Ray Roberts, Lake	788,167	579,666	74	-5,588	-1	-101,397	-13
Jim Chapman Lake (Cooper)	260,332	84,268	32	3,750	1	-55,233	-21
Graham, Lake	45,288	22,681	50	-312	-1	-9,701	-21
*Lost Creek Reservoir	11,950	8,359	70	-98	-1	-1,687	-14
Bridgeport, Lake	366,236	158,094	43	-1,731	-0	-45,558	-12
Lewisville Lake	563,228	370,310	66	-2,094	-0	-65,824	-12
Lavon Lake	406,388	195,107	48	-277	-0	-58,623	-14
Hubbard Creek Reservoir	326,559	71,750	22	-3,758	-1	-16,116	-5
Possum Kingdom Lake	540,340	344,978	64	-3,930	-1	-41,552	-8
*Mineral Wells, Lake	6,760	3,937	58	-63	-1	-1,044	-15
Weatherford, Lake	17,812	10,444	59	878	5	339	2
Eagle Mountain Lake	179,880	122,655	68	72	0	-17,428	-10
Worth, Lake	33,495	22,376	67	-899	-3	-2,067	-6
Grapevine Lake	164,703	105,940	64	-925	-1	-24,362	-15
Ray Hubbard, Lake	452,040	306,972	68	-4,112	-1	-71,425	-16
New Terrell City Lake	8,583	6,445	75	-38	-0	-447	-5

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

Name of Lake or Reservoir	Conservation Storage Capacity (acre-feet)	Conservation Storage end of Mar 2014 (acre-feet)	(%)	Change since end of Feb 2014 (acre-feet)	(%)	Change since end of Mar 2013 (acre-feet)	(%)
(North Central Continue)							
Palo Pinto, Lake	26,827	6,640	25	-648	-2	-8,667	-32
Benbrook Lake	85,648	67,322	79	1,155	1	-472	-1
Arlington, Lake	40,188	33,600	84	1,985	5	830	2
Joe Pool Lake	175,358	165,098	94	-1,152	-1	2,520	1
*Cisco, Lake	25,895	14,231	55	-199	-1	4,744	18
Leon, Lake	26,476	21,103	80	-468	-2	4,010	15
Granbury, Lake	128,046	68,874	54	-3,013	-2	-19,232	-15
Pat Cleburne, Lake	26,008	15,871	61	-185	-1	-2,620	-10
Waxahachie, Lake	10,780	9,149	85	66	1	-280	-3
Bardwell Lake	46,122	36,488	79	-513	-1	-1,090	-2
Proctor Lake	55,457	25,137	45	-851	-2	-7,474	-13
Whitney, Lake	553,344	330,972	60	-13,743	-2	-51,277	-9
Aquilla Lake	44,460	32,102	72	-397	-1	-621	-1
Navarro Mills Lake	49,827	49,826	100	-1	-0	2,327	5
*Halbert, Lake	6,033	5,041	84	-97	-2	223	4
Richland-Chambers Reservoir	1,087,839	791,064	73	-14,418	-1	-90,208	-8
*Brownwood, Lake	128,839	69,920	54	-1,736	-1	970	1
Waco, Lake	189,567	173,636	92	-1,475	-1	14,560	8
Limestone, Lake	208,014	207,645	100	864	0	31,817	15
Belton Lake	435,225	327,444	75	-2,465	-1	-23,217	-5
Stillhouse Hollow Lake	227,771	164,671	72	-1,926	-1	-24,219	-11
Georgetown, Lake	36,823	21,068	57	253	1	-837	-2
Granger Lake	50,779	50,779	100	0	0	0	0
Tawakoni, Lake	871,685	549,867	63	-9,842	-1	-145,332	-17
Mountain Creek, Lake	22,850	22,850	100	0	0	0	0
Squaw Creek, Lake	151,250	147,332	97	-1,027	-1	-2,813	-2
TOTAL	10,661,480	7,025,463	66	-68,144	-1	-983,701	-9
EAST							
Wright Patman Lake	122,593	122,593	100	0	0	0	0
*Sulphur Springs, Lake	17,747	17,747	100	328	2	2,785	16
Cypress Springs, Lake	66,756	66,756	100	227	0	5,392	8
Bob Sandlin, Lake	190,822	166,714	87	3,853	2	15,509	8
Caddo, Lake	29,898	29,898	100	0	0	0	0
Martin, Lake	75,116	75,116	100	48	0	7,500	10
Monticello, Lake	34,740	34,740	100	0	0	0	0
Fork Reservoir, Lake	605,061	499,716	83	5,396	1	3,522	1
O the Pines, Lake	241,363	241,363	100	0	0	47,645	20
Cedar Creek Reservoir in Trinity	644,686	522,298	81	-11,368	-2	-15,188	-2
Athens, Lake	29,435	29,435	100	216	1	4,190	14
Palestine, Lake	373,199	373,199	100	0	0	11,577	3
Tyler, Lake	73,161	72,030	98	2,559	3	13,552	19
Murvaul, Lake	38,285	38,285	100	0	0	0	0
Jacksonville, Lake	25,670	25,670	100	0	0	0	0
Nacogdoches, Lake	39,522	39,456	100	608	2	715	2
Houston County Lake	17,113	17,113	100	0	0	0	0
Sam Rayburn Reservoir	2,857,077	2,558,484	90	79,545	3	-68,933	-2
Toledo Bend Reservoir (Texas)	2,245,752	2,077,415	93	62,719	3	65,173	3
Toledo Bend Reservoir (TX & LA)	4,472,900	2,077,415	46	62,719	1	65,173	1
*Livingston, Lake	1,785,348	1,785,348	100	0	0	0	0
B A Steinhagen Lake	66,961	65,700	98	8,097	12	6,731	10
Conroe, Lake	416,177	405,937	98	10,378	2	47,241	11
TOTAL	9,996,482	9,265,013	93	162,606	2	147,411	1

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

Name of Lake or Reservoir	Conservation Storage Capacity (acre-feet)	Conservation Storage end of Mar		Change since end of Feb 2014		Change since end of Mar 2013		
		2014 (acre-feet)	(%)	(acre-feet)	(%)	(acre-feet)	(%)	
TRANS-PECOS								
Red Bluff Reservoir	151,110	68,848	46	97	0	41,637	28	
TOTAL	151,110	68,848	46	97	0	41,637	28	
EDWARDS PLATEAU								
Oak Creek Reservoir	39,210	7,628	19	-288	-1	-3,192	-8	
E V Spence Reservoir	517,272	14,495	3	-1,640	-0	-11,669	-2	
O C Fisher Lake	119,445	749	1	-3	-0			
*O H Ivie Reservoir	554,340	67,329	12	-4,272	-1	-46,132	-8	
Twin Buttes Reservoir	182,454	No Data						
Brady Creek Reservoir	28,808	8,875	31	-271	-1	1,521	5	
Buchanan, Lake	860,607	322,226	37	-4,760	-1	-30,928	-4	
Inks, Lake	13,962	12,922	93	-106	-1	-23	-0	
Lyndon B Johnson, Lake	115,056	110,941	96	-122	-0	489	0	
*Amistad Reservoir (Texas)	1,840,849	902,000	49	-5,580	-0	86,156	5	
*Amistad Reservoir (TX & Mexico)	3,275,532	902,000	28	-5,580	-0	86,156	3	
TOTAL	4,089,549	1,447,165	34	-17,042	-0	61,368	2	
SOUTH CENTRAL								
Travis, Lake	1,113,348	394,363	35	-3,200	-0	-23,746	-2	
*Austin, Lake	23,972	22,988	96	170	1	-186	-1	
Somerville Lake	147,104	121,439	83	1,992	1	-5,368	-4	
Canyon Lake	378,781	313,369	83	-2,471	-1	7,549	2	
Medina Lake	254,823	7,879	3	-502	-0	-8,818	-3	
*Coletto Creek Reservoir	31,040	22,078	71	340	1	-2,429	-8	
TOTAL	1,949,068	882,116	45	-3,671	-0	-32,998	-2	
UPPER COAST								
Houston, Lake	128,054	128,054	100	0	0	1,498	1	
Texana, Lake	159,566	135,401	85	7,257	5	4,323	3	
TOTAL	287,620	263,455	92	7,257	3	5,821	2	
SOUTHERN								
Choke Canyon Reservoir	695,262	228,412	33	-3,085	-0	-72,871	-10	
Corpus Christi, Lake	256,961	214,756	84	-4,351	-2	175,321	68	
*Falcon Reservoir (Texas)	1,551,007	624,596	40	15,705	1	274,491	18	
*Falcon Reservoir (TX & Mexico)	2,646,817	624,596	24	15,705	1	274,491	10	
TOTAL	2,503,230	1,067,764	43	8,269	0	376,941	15	
STATE TOTAL	31,376,335	20,227,186	64	84,479	0	-472,741	-2	

* Conservation volume is used as conservation storage capacity because the dead storage is unknown.

** No reading available. Last valid reading was near empty. Percentage estimated assuming current storage is zero.

Elephant Butte Reservoir	1,973,358	361,516	18	21,862	1	141,513	7
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Note:

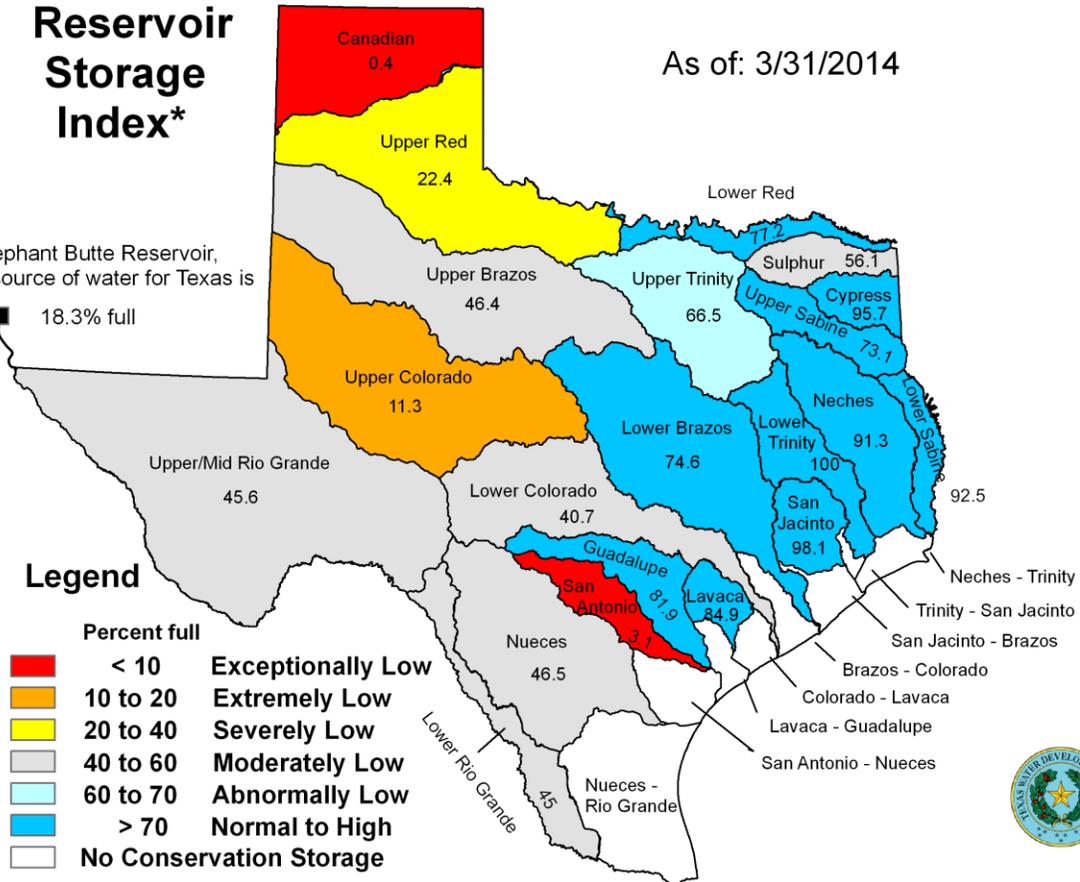
Conservation storage capacity is the space available to store water above the lowest outlet and below the top of conservation pool, or normal maximum operating level. Conservation storage refers to the volume of water held within the conservation storage space. Not included is any water in flood control storage (above the top of conservation pool or normal maximum operating level), or any water in the dead storage. Conservation storage percentage is based on the conservation storage capacity of the reservoir and the conservation storage in the reservoir on date shown. Percent change is given by 100*(current conservation storage - past conservation storage)/conservation storage capacity. Figures shown are for the Texas share of conservation storage in all reservoirs.

MARCH RESERVOIR CONDITIONS

As of: 3/31/2014

Reservoir Storage Index*

Elephant Butte Reservoir, a source of water for Texas is 18.3% full



Legend

Percent full	Storage Category
< 10	Exceptionally Low
10 to 20	Extremely Low
20 to 40	Severely Low
40 to 60	Moderately Low
60 to 70	Abnormally Low
> 70	Normal to High
No Conservation Storage	

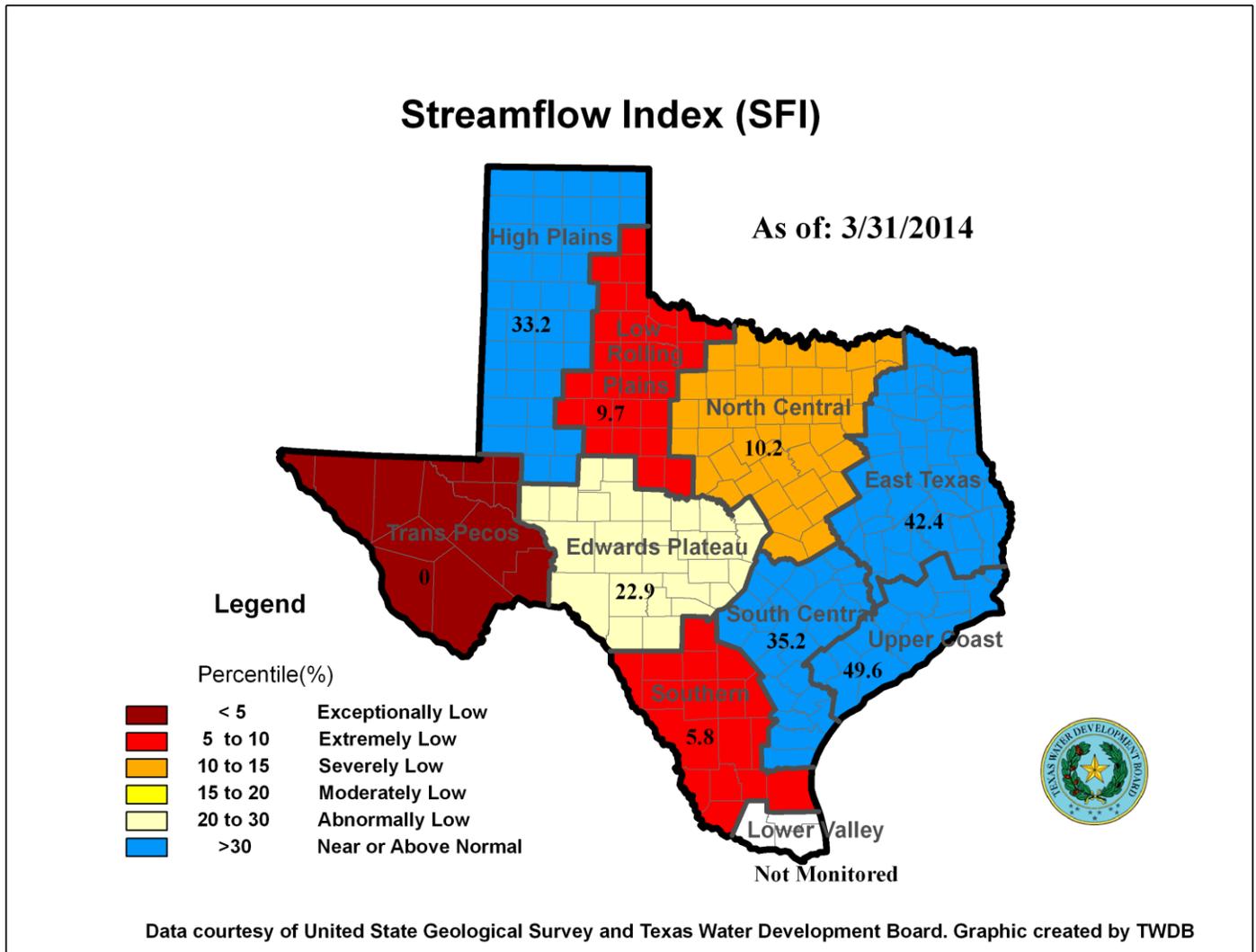


*Percent of combined conservation storage capacity of 115 major water supply reservoirs by sub-basin (dead pools are excluded)

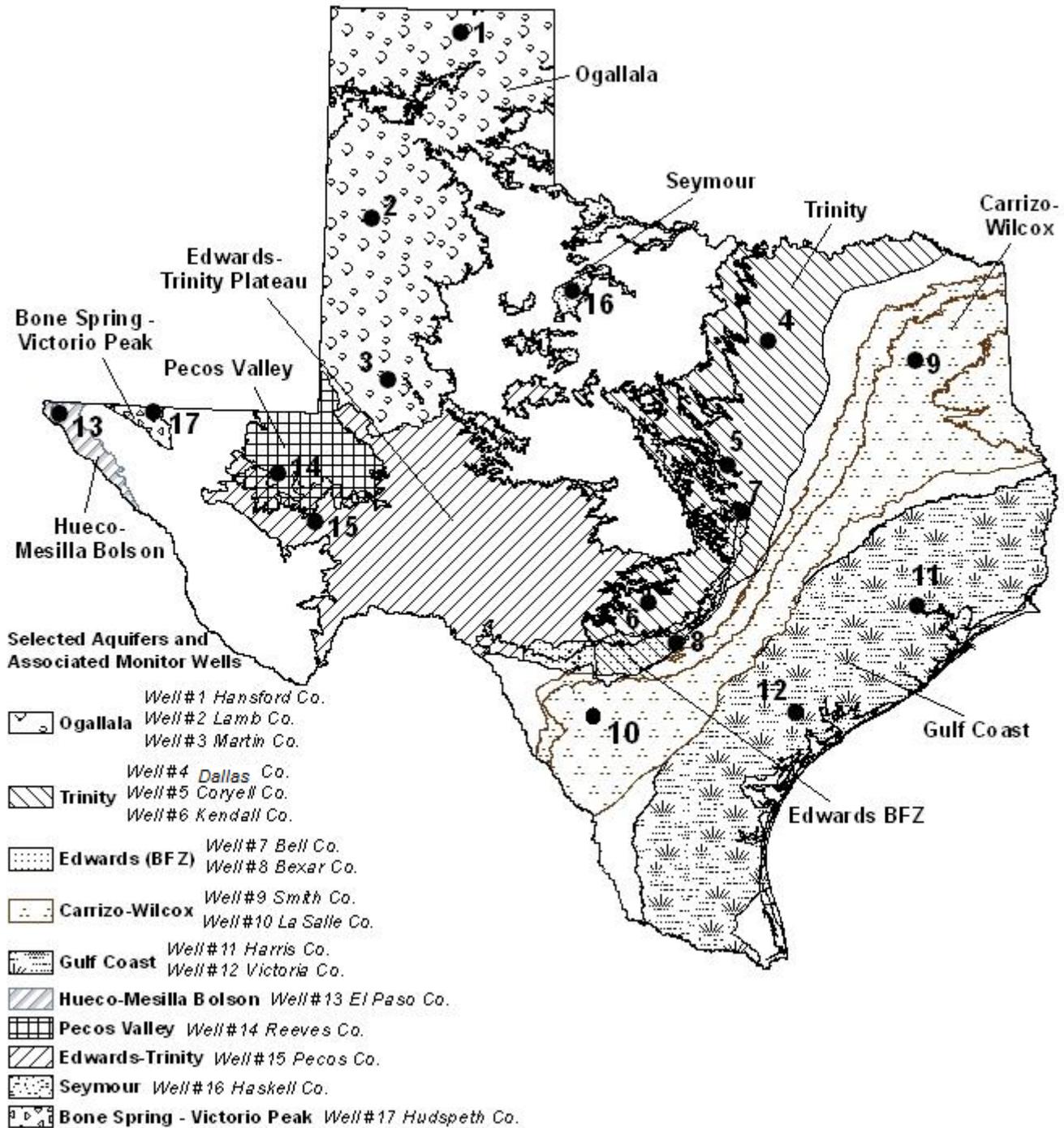
MARCH STREAMFLOW CONDITIONS

Of 29 reporting index stations monitored this month, computed 30-day mean flows were exceptionally low (<5%) at 10 stations, extremely low (5-10%) at 3 stations, severely low (10-15%) at 1 station, abnormally low (20-30%) at 3 stations, and near normal (30% - 70%) at the remaining 12 stations. Compared to last month, flows have increased at 10 index stations and decreased at 14 stations.

On a regional basis, flows in this month at index stations were exceptionally low in the Trans-Pecos region, extremely low in the Southern and Low Rolling regions, severely low in North Central region, abnormally low in Edwards Plateau region, and near or above normal in all other regions. Streamflow in the Lower Valley region is not monitored.



MARCH 2014 GROUNDWATER LEVELS IN OBSERVATION WELLS



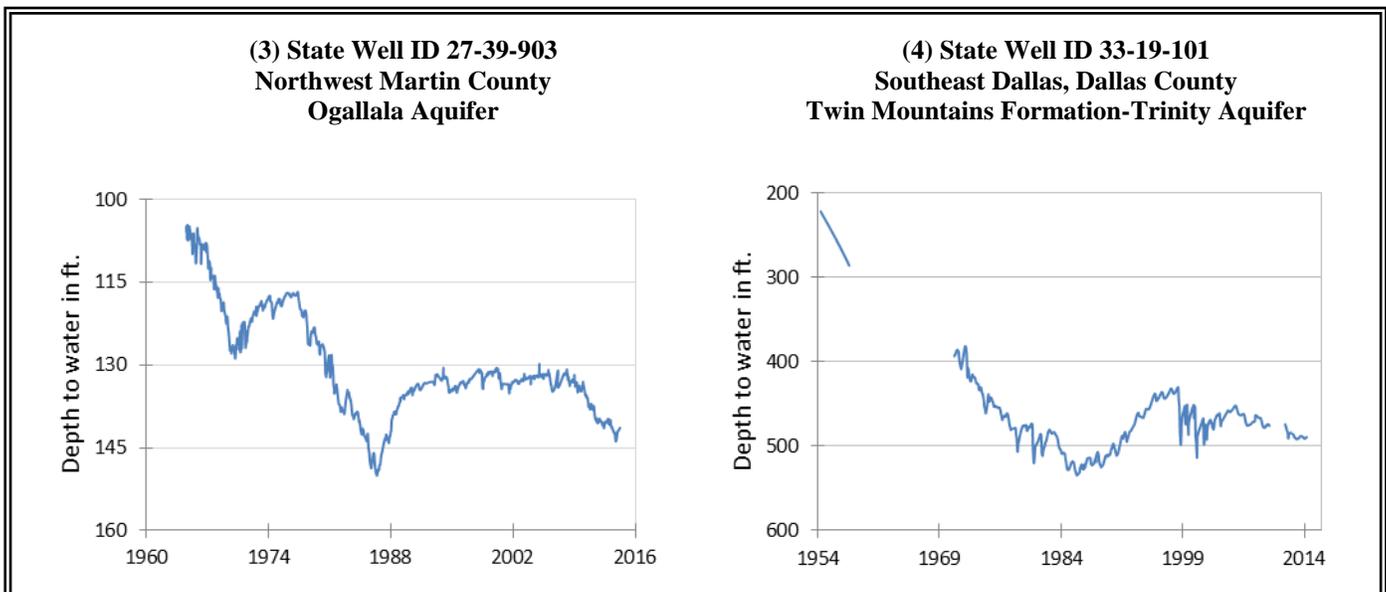
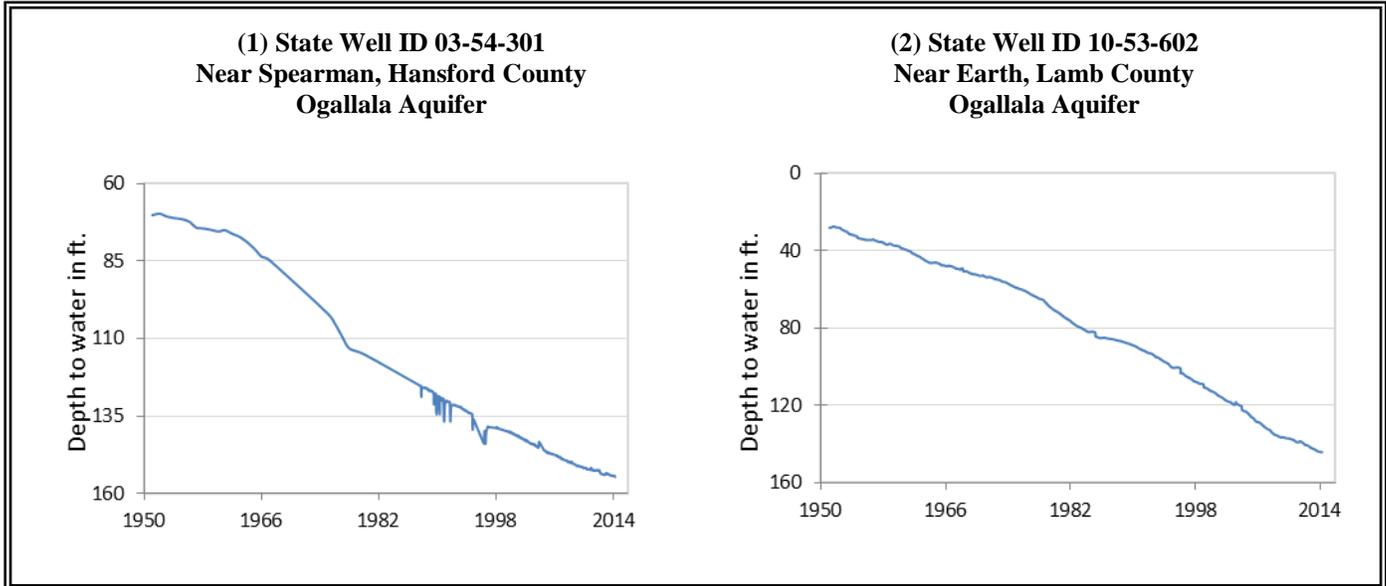
March, 2014

Water level measurements were available for all seventeen key monitoring wells in the state. Water levels rose in eight of the monitoring wells since the beginning of March, ranging from 0.15 feet in the Smith County Carrizo Wilcox Aquifer well to 3.10 feet in the La Salle County Carrizo Aquifer well. Water levels declined in nine monitoring wells, ranging from 0.04 feet in the Lamb County Ogallala Aquifer well to 4.09 feet in the Hudspeth County Bone Spring Aquifer well. The J-17 well in San Antonio recorded a water level of 90.21 feet below land surface or 640.79 feet above mean sea level. This water level is 0.79 feet above the Stage III critical management level in that segment of the Edwards Aquifer. Stage II restrictions were declared by the EAA when the ten-day average fell below the 650-foot elevation, or 81 feet below land surface.

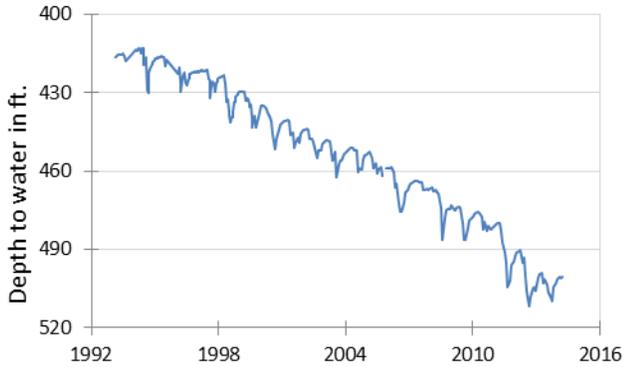
* ID is used in this publication to differentiate between the monitoring well number (1 - 17) as displayed on the aquifer map and the TWDB's six- or seven-digit state well "identification" number.

Monitoring Well	March	February	month change	year change	historical change	first measured
(1) Hansford 0354301	154.66	154.3	-0.36	-0.86	-84.54	1951
(2) Lamb 1053602	144.24	144.2	-0.04	-1.36	-116.09	1951
(3) Martin 2739903	141.38	141.66	0.28	-0.06	-36.49	1964
(4) Dallas 3319101	489.22	490.09	0.87	1.52	-267.22	1954
(5) Coryell 4035404	500.34	500.79	0.45	-1.32	-208.34	1955
(6) Kendall 6802609	132.75	131.6	-1.15	3.16	-72.75	1975
(7) Bell 5804816	124.63	124.25	-0.38	1.59	-1.5	2008
(8) Bexar 6837203	90.21	89.7	-0.51	-6.8	-43.57	1932
(9) Smith 3430907	437.56	437.71	0.15	2.46	-71.56	1987
(10) La Salle 7738103	467.97	471.07	3.1	-17.92	-214.9	2003
(11) Harris 6514409	191.11	192.44	1.33	4.39	-55.61	1956
(12) Victoria 8017502	35.64	36.53	0.89	-0.9	-1.64	1958
(13) El Paso 4913301	295.32	294.49	-0.83	-1.73	-63.42	1967
(14) Reeves 4644501	152.58	154.56	1.98	-3	-60.49	1952
(15) Pecos 5216802	207.55	197.55	-10	-7.21	39.33	1976
(16) Haskell 2135748	48.84	48.2	-0.64	-0.4	-7.51	2002
(17) Hudspeth 4807516	136.58	132.49	-4.09	2.15	-32.66	1964

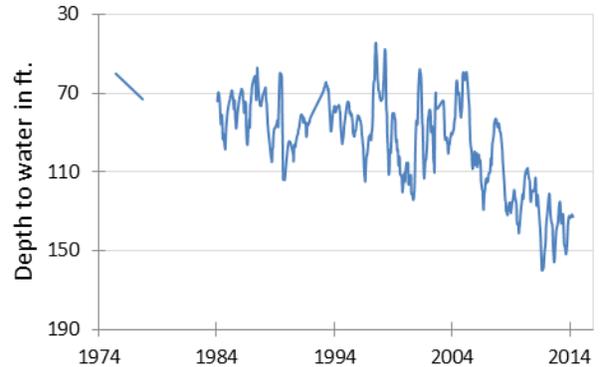
MARCH GROUNDWATER LEVELS IN OBSERVATION WELLS



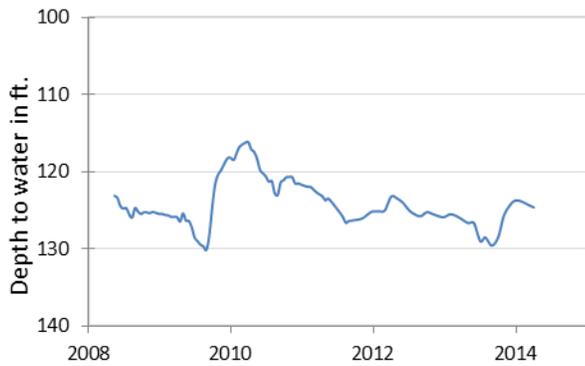
**(5) State Well ID 40-35-404
Gatesville, Coryell County
Hosston Formation-Trinity Aquifer**



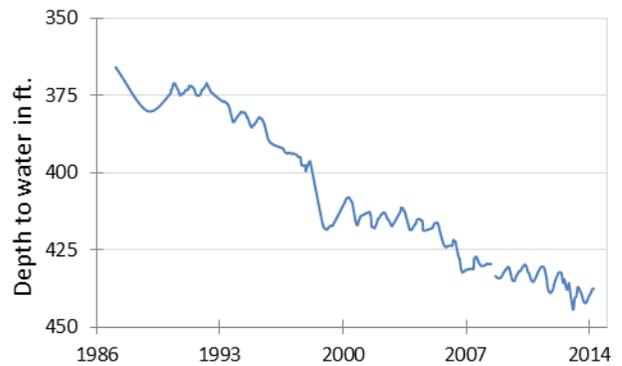
**(6) State Well ID 68-02-609
Waring, Kendall County
Cow Creek Formation-Trinity Aquifer**



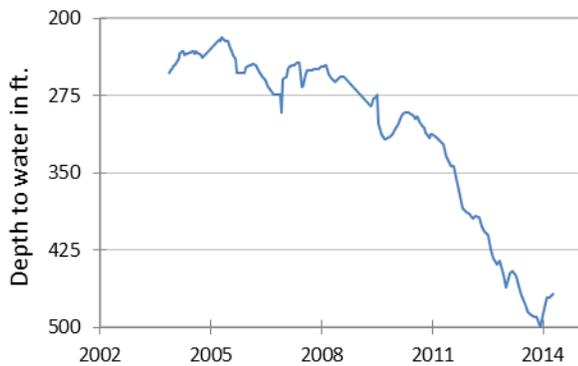
**(7) State Well ID 58-04-816
Near Salado, Bell County
Edwards (BFZ) Aquifer**



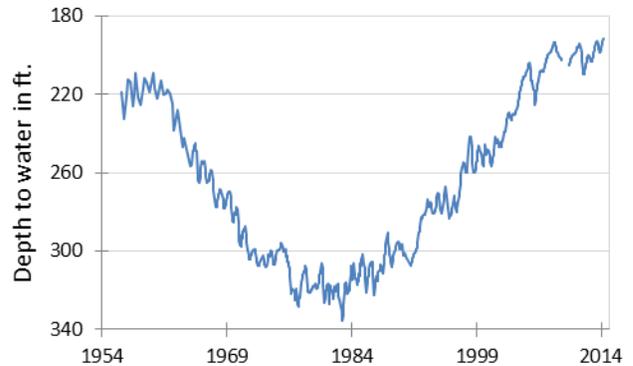
**(9) State Well ID 34-30-907
Red Springs, Smith County
Carrizo-Wilcox Aquifer**



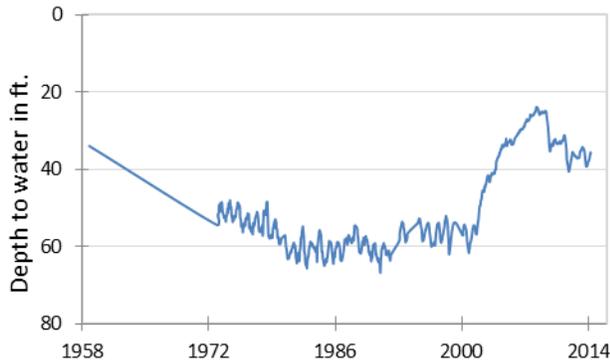
**(10) State Well ID 77-38-103
Near Cotulla, La Salle County
Carrizo-Wilcox Aquifer**



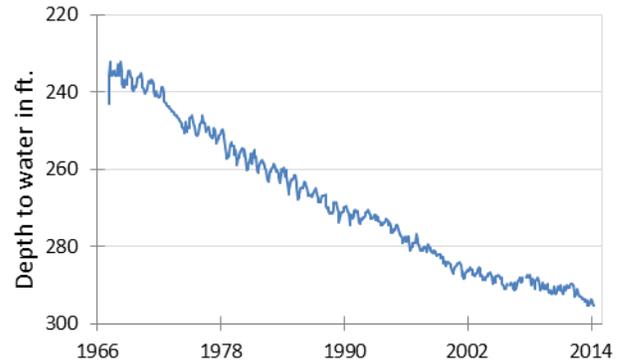
**(11) State Well ID 65-14-409
Alief, Harris County
Evangeline Formation-Gulf Coast Aquifer**



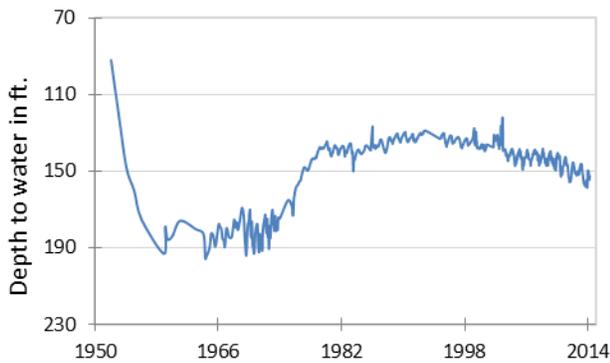
(12) State Well ID 80-17-502
Near Bloomington, Victoria County
Lissie Formation-Gulf Coast Aquifer



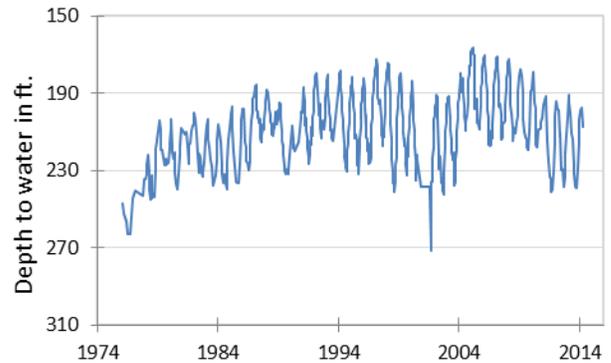
(13) State Well ID 49-13-301
El Paso, El Paso County
Hueco-Mesilla Bolson Aquifer



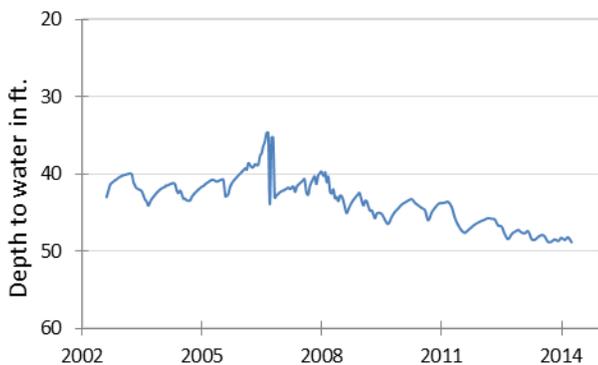
(14) State Well ID 46-44-501
Near Pecos, Reeves County
Pecos Valley Aquifer



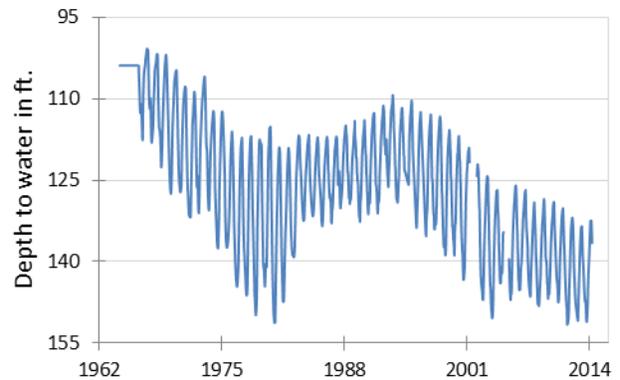
(15) State Well ID 52-16-802
Fort Stockton, Pecos County
Edwards-Trinity (Plateau) Aquifer



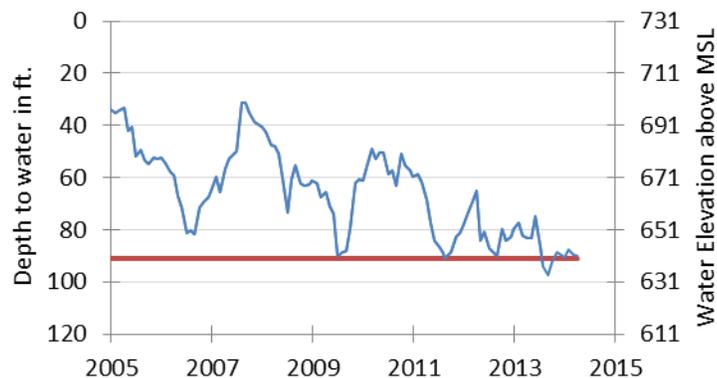
(16) State Well ID 21-35-748
Near O'Brien, Haskell County
Seymour Aquifer



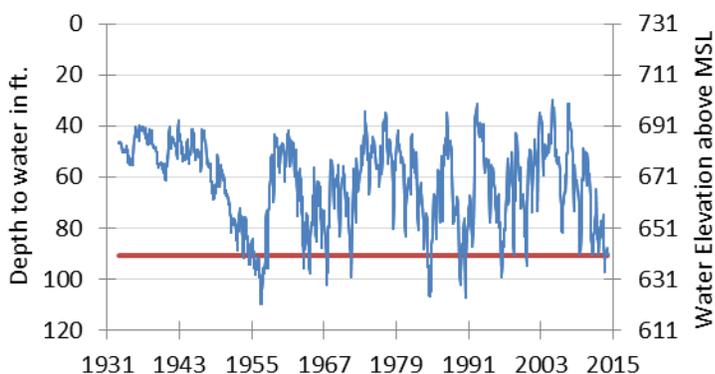
(17) State Well ID 48-07-516
Dell City, Hudspeth County
Bone Spring - Victorio Peak Aquifer



**(8) State Well ID 68-37-203 (J-17)
In San Antonio, Bexar County
Edwards (BFZ) Aquifer**

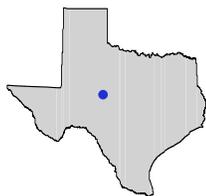


The late March water level measurement in this Edwards (BFZ) Aquifer well, elevation 731 feet above mean sea level, was 90.21 feet below land surface, or 640.79 feet above mean sea level. This was 0.51 feet below last month's measurement, 6.8 feet below last year's measurement, and 43.57 feet below the initial measurement recorded in 1932.



***** Water levels below the red line indicate Edwards Aquifer Authority Stage III drought restrictions. *****

HYDROGRAPH OF THE MONTH

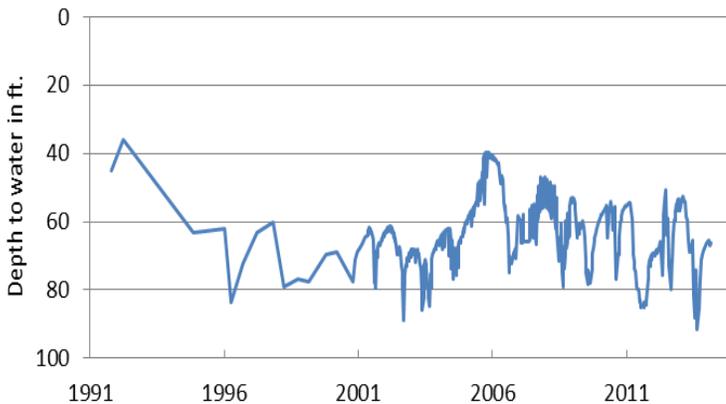


Each month this space features a new hydrograph (marked with the • symbol on the map) depicting different aquifers and different conditions in Texas.

Lipan Aquifer

The Lipan Aquifer is a minor aquifer found in west central Texas near San Angelo, TX. The aquifer is composed of Quaternary age alluvium overlying older westward dipping Permian strata. The alluvium includes up to 125 feet of saturated sediments of the Leona Formation, (the primary formation of the Lipan Aquifer) a fluvial terrace deposit of gravel, sand, silt, and clay. The much older underlying strata include sandstones, dolomite, marly limestone, red-clay shales and gypsum layers. Groundwater in the alluvium ranges from fresh to slightly saline, containing between 350 to 3,000 milligrams per liter of total dissolved solids and is very hard. The aquifer is primarily used for irrigation but also supports other uses. Beginning in the late 1990s a combination of drought and heavy irrigation pumping from the aquifer resulted in periods where the Lipan could not be pumped through the entire irrigation season, as it would not supply the needed quantity of water. During irrigation season levels drop by as much as 20 feet, as indicated in the accompanying hydrograph.

**Well # 43-45-306
Tom Green County, TX**



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